

DECEMBER 18, 2012

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352



December 18, 2012

Scot Fitzgerald
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Scot Fitzgerald,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF121513

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) MSC-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan

This letter contains the following information for sample delivery group WSCF121513

- * Cover Sheet (Attachment 1)
- * Narrative (Attachment 2)
- * Analytical Results (Attachment 3)
- * Sample Receipt Information (Attachment 4)

Very truly yours,

A stylized electronic signature in black ink, appearing to read "J. Hale".

Electronically signed by Joseph Hale

For Lab Manager, Dan T. Smith

WSCF Analytical Lab

(509) 373-4804

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF121513

Data Deliverable Date 12/31/12

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
X13-005	B2ML55	121513001	WATER	11/28/12	11/28/12
X13-005	B2ML61	121513002	WATER	11/28/12	11/28/12
X13-005	B2ML62	121513003	WATER	11/28/12	11/28/12
X13-005	B2ML65	121513004	WATER	11/28/12	11/28/12
X13-005	B2MKJ2	121513005	WATER	11/28/12	11/28/12
X13-005	B2ML49	121513006	WATER	11/28/12	11/28/12
X13-005	B2MKJ0	121513007	WATER	11/28/12	11/28/12
X13-005	B2MKX2	121513008	WATER	11/28/12	11/28/12
X13-005	B2MKX5	121513009	WATER	11/28/12	11/28/12
X13-005	B2ML44	121513010	WATER	11/28/12	11/28/12
X13-005	B2ML52	121513011	WATER	11/28/12	11/28/12
X13-005	B2ML46	121513012	WATER	11/28/12	11/28/12
X13-006	B2MT52	121513013	WATER	11/28/12	11/28/12

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW)*, Master Contract 39818, Revision 3, "Laboratory Analytical Services to CHPRC Soil and Groundwater Remediation Project."

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, C, D, J and U) may be applicable to this report, as appropriate.

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **C** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were C flagged (applies to inorganic and wet chemical analyses).
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **B (organic analyses)** – Analyte was detected in the blank and was evaluated. Affected sample results in the batch were B flagged.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Attachment 2
Narrative
WSCF121513

Inorganic Comments

Hexavalent Chromium – The hold time requirement for this analysis was met. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group.
Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 19 pages
Including cover page

DECEMBER 18, 2012

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Scot Fitzgerald

Contract # MOA-FH-CHPRC-2008
Group # WSCF121513
Report Date December 18, 2012

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Heather Medley

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no 'Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7005. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
210942	210942	17	LCS	85752	LCS		Hexavalent chromium Discrete Analyzer
210942	210942	18	BLANK	85753	BLANK		Hexavalent chromium Discrete Analyzer
210942	210942	19	DUP	85754	B2ML62(121513003DUP)	121513003	Hexavalent chromium Discrete Analyzer
210942	210942	20	MS	85755	B2ML62(121513003MS)	121513003	Hexavalent chromium Discrete Analyzer
210942	210942	21	SAMPLE	121513001	B2ML55		Hexavalent chromium Discrete Analyzer
210942	210942	22	SAMPLE	121513002	B2ML61		Hexavalent chromium Discrete Analyzer
210942	210942	23	SAMPLE	121513003	B2ML62		Hexavalent chromium Discrete Analyzer
210942	210942	24	SAMPLE	121513004	B2ML65		Hexavalent chromium Discrete Analyzer
210942	210942	25	SAMPLE	121513005	B2MKJ2		Hexavalent chromium Discrete Analyzer
210942	210942	26	SAMPLE	121513006	B2ML49		Hexavalent chromium Discrete Analyzer
210942	210942	27	SAMPLE	121513007	B2MKJ0		Hexavalent chromium Discrete Analyzer
210942	210942	28	SAMPLE	121513008	B2MKX2		Hexavalent chromium Discrete Analyzer
210942	210942	29	SAMPLE	121513009	B2MKX5		Hexavalent chromium Discrete Analyzer
210942	210942	30	SAMPLE	121513010	B2ML44		Hexavalent chromium Discrete Analyzer
210943	210943	1	BLANK	85758	BLANK		Hexavalent chromium Discrete Analyzer
210943	210943	3	LCS	85760	LCS		Hexavalent chromium Discrete Analyzer
210943	210943	4	DUP	85761	B2ML52(121513011DUP)	121513011	Hexavalent chromium Discrete Analyzer
210943	210943	5	MS	85762	B2ML52(121513011MS)	121513011	Hexavalent chromium Discrete Analyzer
210943	210943	6	SAMPLE	121513011	B2ML52		Hexavalent chromium Discrete Analyzer
210943	210943	7	SAMPLE	121513012	B2ML46		Hexavalent chromium Discrete Analyzer
210943	210943	8	SAMPLE	121513013	B2MT52		Hexavalent chromium Discrete Analyzer

Method Reference

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-265-403	Hexavalent Chromium Analysis		
	EPA SW-846	7196A	Hexavalent Chromium
	HEIS	7196_CR6	Hexavalent Chromium

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at <http://www7.rl.gov/rapidweb/AS-DOL/index.cfm>

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513001
SAF# X13-005
Sample ID B2ML55

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00970		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513002
SAF# X13-005
Sample ID B2ML61

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0128		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513003
SAF# X13-005
Sample ID B2ML62

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0133		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513004
SAF# X13-005
Sample ID B2ML65

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.00980		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513005
SAF# X13-005
Sample ID B2MKJ2

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513006
SAF# X13-005
Sample ID B2ML49

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513007
SAF# X13-005
Sample ID B2MKJ0

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
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WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513008
SAF# X13-005
Sample ID B2MKX2

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513009
SAF# X13-005
Sample ID B2MKX5

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513010
SAF# X13-005
Sample ID B2ML44

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513011
SAF# X13-005
Sample ID B2ML52

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	B	0.00350		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513012
SAF# X13-005
Sample ID B2ML46

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403	U	<0.0020		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

WSCF Analytical Results Report

DECEMBER 18, 2012

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Sample # 121513013
SAF# X13-006
Sample ID B2MT52

Matrix WATER
Sampled 11/28/12
Received 11/28/12

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
										11/28/12
Hexavalent chromium Discrete Analyzer										
Hexavalent chromium	18540-29-9	LA-265-403		0.0160		mg/L	1	0.0020	0.0050	11/28/12

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)
o - LCS recovery outside established laboratory acceptance limits.
o - LCS recovery outside established laboratory acceptance limits.

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Analytical Batch 210942 (QC Batch: 210942) Test Hexavalent chromium Discrete Analyzer
Associated Samples 121513001, 121513002, 121513003, 121513004, 121513005, 121513006, 121513007, 121513008, 121513009, 121513010

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS										
QC Sample #85752										
Hexavalent chromium	18540-29-9		0.0510	mg/L	102	90 - 110				11/28/12
BLANK										
QC Sample #85753										
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/28/12
DUP										
QC Sample #85754										
Original 121513003										
Hexavalent chromium	18540-29-9	0.0133	0.0131	mg/L			1.50	20		11/28/12
MS										
QC Sample #85755										
Original 121513003										
Hexavalent chromium	18540-29-9	0.0133	0.0390	mg/L	97.5	85 - 115				11/28/12

* - QC result out of range

n/a - Not Applicable

Quality Control Report

Attention Scot Fitzgerald
Department Inorganic

Group # WSCF121513

Analytical Batch 210943 (QC Batch: 210943) Test Hexavalent chromium Discrete Analyzer
Associated Samples 121513011, 121513012, 121513013

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK		QC Sample #85758								
Hexavalent chromium	18540-29-9		<0.0020	mg/L					U	11/28/12
LCS		QC Sample #85760								
Hexavalent chromium	18540-29-9		0.0509	mg/L	101.8	90 - 110				11/28/12
DUP		QC Sample #85761								
		Original 121513011								
Hexavalent chromium	18540-29-9	0.00350	0.00300	mg/L			15.40	20	B	11/28/12
MS		QC Sample #85762								
		Original 121513011								
Hexavalent chromium	18540-29-9	0.00350	0.0384	mg/L	96	85 - 115				11/28/12

* - QC result out of range

n/a - Not Applicable

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 16 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED**WSCF Laboratory**

PO Box 650 S3-30
Richland, WA 99352

ATTN: Scot Fitzgerald

Customer Code: CHPRC

PO #: 403899

Work Order #: 121513

Profile #: X13-005-309

Proj. Mgr.:

Phone:

The following samples were received from you on 11/28/2012 1:10:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
Tests scheduled				
121513001	B2ML55	WATER	11/28/2012 09:49	11/28/2012 13:10
		CR6DA-W		
121513002	B2ML61	WATER	11/28/2012 09:59	11/28/2012 13:10
		CR6DA-W		
121513003	B2ML62	WATER	11/28/2012 09:59	11/28/2012 13:10
		CR6DA-W		
121513004	B2ML65	WATER	11/28/2012 10:12	11/28/2012 13:10
		CR6DA-W		
121513005	B2MKJ2	WATER	11/28/2012 11:09	11/28/2012 13:10
		CR6DA-W		
121513006	B2ML49	WATER	11/28/2012 10:40	11/28/2012 13:10
		CR6DA-W		
121513007	B2MKJ0	WATER	11/28/2012 11:19	11/28/2012 13:10
		CR6DA-W		
121513008	B2MKX2	WATER	11/28/2012 12:23	11/28/2012 13:10
		CR6DA-W		
121513009	B2MKX5	WATER	11/28/2012 12:31	11/28/2012 13:10
		CR6DA-W		
121513010	B2ML44	WATER	11/28/2012 11:46	11/28/2012 13:10
		CR6DA-W		
121513011	B2ML52	WATER	11/28/2012 10:51	11/28/2012 13:10

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

CR6DA-W

121513012	B2ML46	WATER	11/28/2012 12:07	11/28/2012 13:10
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CR6DA-W

121513013	B2MT52	WATER	11/28/2012 10:24	11/28/2012 13:10
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CR6DA-W

Test Acronym Description

Test Acronym	Description
--------------	-------------

CR6DA-W	Cr6 (W Discrete analyzer)
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CH2M Hill Plateau Remediation
Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X13-005-309

Page 1 of 1

Collector	J. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650				
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20				
Project Title	AQUICFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506 52 / 9, 10	Ice Chest No.	N/A				
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A				
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A				
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.							
Sample No.	121513	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B2M155	1	N	W	11-28-12	0949	1x500-mL aG	7156_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *
J. Aguilar			11-28-12 1210	HHH			11-28-12 1210	S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air US = Drums/Seals DL = Drums/Liands T = Tissue W1 = Wipe L = Liquid V = Vegetation X = Other
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
Relinquished By	Date/Time	Received By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time	Disposed By	Date/Time	Disposed By	Date/Time	

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A-6004-642 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-312 Page 1 of 1		
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650	
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20	
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52/9,10			Ice Chest No.	N/A	
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A	
Protocol	SURV			Priority:	31 Days			Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SIXG.						
Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis		Holding Time	Preservative	
B2ML61	2-	N	W	11-28-12	0959	1x500-ml AG		7196_Cr6 Hexavalent Chromium (1)	24 Hours	CaO1-4C
Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	Matrix *		
J. Aguilar			11-28-12 1240	HA Wilson			11-28-12 1340	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SD = Solid T = Tissue SL = Sludge WT = Waste W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By	Date/Time	Received By	Date/Time							
Relinquished By	Date/Time	Received By	Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time			

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A-5004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-315 Page 1 of 1	
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52 / 9, 10			Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A
Protocol	SLRV			Priority:	31 Days			Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1996/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401399. FY12 and FY13 samples cannot be in the same SDG.				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B2ML62	N	W	11-28-12	0959	1x500-ml AG	7196_CRF6 Hexavalent Chromium (1)	24 Hours	Cool-4C	
Relinquished By				Date/Time	Received By	Date/Time	Matrix *		
J. Aguilar				11-28-12 1310	PHH/Don A	11-28-12 1310	S = Soil DS = Drum Solids SE = Sediment T = Tissue SD = Soil W = Sludge SL = Sludge L = Liquid W = Water V = Vegetation A = Air X = Other		
Relinquished By				Date/Time	Received By	Date/Time			
Relinquished By				Date/Time	Received By	Date/Time			
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Date/Time		
PRINTED 0 10/9/2012				A-8004-842 (REV.2)					

Chain of Custody

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-317 Page 1 of 1			
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650		
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064EES20		
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HN-FN-506 52 / 9, 10			Ice Chest No.	N/A		
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A		
Protocol	SURV			Priority:	31 Days			Offsite Property No.	N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site Wide Generator Knowledge Information from applic. The CACN for all analytical work at WSCF is 4035999. FY12 and FY13 samples cannot be in the same SDG.							
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis			Holding Time	Preservative	
B2ML65	4	N	W	11-28-12	1012	1x500-mL aG	7196_Cr86 Hexavalent Chromium (1)			24 Hours	Cool-4C

Relinquished By	Print	Sig	Date/Time	Received By	Date/Time	Signature	Date/Time	Matrix *
J. Aquilino			11-28-12 1310	Jefferson			11-28-12 1310	S = Soil SE = Sediment SD = Solid W = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Weights L = Liquid V = Vegetation C = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Acker			11-28-12 1310	A. Holden			11-28-12 1310	S - Soil SE - Sediment SQ - Solid SL - Sludge W - Water O - Oil A - Air DS - Dune Soils DL - Dune Liquids T - Tissue W1 - Waste L - Liquid V - Vegetation O1 - Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer per lab procedure, used in process)				
PRINTED ON 10/9/2012				A-8004-842 (REV 2)				

C2H2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-201	
				Page 1 of 1					
Collector	J. Ayler			Contract/Requester	Karen Waters-Husted		Telephone No.	376-4650	
SAF No.	X13-005			Sampling Origin	Hanford Site		Purchase Order/Charge Code	303064ES20	
Project Title	ACQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52-9, 10		Ice Chest No.	N/A	
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE		Bill of Lading/Air Bill No.	N/A	
Protocol	SURV			Priority:	31 Days		Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information from applies. The CACN for all analytical work at WSCF is 401899. FY12 and FY13 samples cannot be in the same SDG.		Hold Time		Total/Active/Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No	Filter	*	Date	Time	No/Type Container	Sample Analysis		Holding Time	Preservative
B2MKJ2	5	N	11-28-12	1109	1x600 mL AG	7196_CFR6 Hexavalent Chromium (1)		24 Hours	Cool-AC

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-305 Page 1 of 1	
Collector	J. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650				
SAF No.	X13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064ES20				
Project Title	AQUIFER TUBES, NOVEMBER 2012	Logbook No.	HNF-N-506-52 / 9,10	Ice Chest No.	N/A				
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A				
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A				
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403859 FY12 and FY13 samples cannot be in the same SDXG.					
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B2ML49	N	W	11-28-12	1040	1x500-ml AG	7196_Cr6 Hexavalent Chromium (1)	24 Hours	Co6l-4C	
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar				11-28-12 1310	CH2MHill			11-28-12 1310	S = Soil SE = Sediment SD = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Waste L = Liquid V = Vegetation X = Other
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
Relinquished By		Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g. Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		

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Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-200	
Collector <i>J. Aguilar</i>		Contact/Requester Karen Waters-Husted		Telephone No. 376-4650		Purchase Order/Charge Code 303064ES20		Page 1 of 1	
SAF No. X13-005		Sampling Origin Hanford Site		Logbook No. HNF-N-506 52 / 9,10		Ice Chest No. N/A		Bill of Lading/Air Bill No. N/A	
Project Title AQUIFER TUBES, NOVEMBER 2012		Method of Shipment GOVERNMENT VEHICLE		Priority 31 Days		SPECIAL INSTRUCTIONS HOLD TIME		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Shipped To (Lab) Waste Sampling & Characterization		Sample Analysis 7196_CR6 Hexavalent Chromium (1)		Holding Time 24 Hours		Preservative Cool-AC			
Protected SURV		Possible Sample Hazards/Remarks *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		Site Wide Generator Knowledge Information From applics The CACN for all analytical work at WSCF is 103899 FY12 and FY13 samples cannot be in the same SDC.					
Sample No. B2MKJO	Filter N	Date 11-28-12	Time 1119	No/Type Container 1x500-mL aG					
Relinquished By <i>J. Aguilar</i>		Date/Time 11-28-12 1310		Received By <i>Off Husted</i>		Date/Time 11-28-12 1310		Matrix *	
Relinquished By		Date/Time		Received By		Date/Time		S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Dism. Solids TL - Dism. Liquids T - Tissue WI - Wire L - Liquid V - Vegetation X - Other	
Relinquished By		Date/Time		Received By		Date/Time			
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time	

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A-6004-842 (REV 2)

Chain of Custody

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-263	
								Page 1 of 1	
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52 / 9, 10			Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A
Protocol	SURV			Priority:	31 Days			Office Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Clearance Knowledge Information Form applies The CACN for all analytical work at WSCF is 80399. FY12 and FY13 samples cannot be in the same SDG.					
Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis		Holding Time	Preservative
B2MKX2	N	W	11-28-12	1223	1x500-mL a/g	7199_CRG: Hexavalent Chromium (1)		24 Hours	Cool-4C

Relinquished By	Print	Signature	Date/Time	Received By	Print	Signature	Date/Time	MARTIN * S = Soil DS = Drum Spills SE = Sediment DL = Decontaminants SO = Solid T = Tissue SL = Sludge WL = Waste W = Water L = Liquid O = Oil V = Volatile A = Air X = Other
Relinquished By	J. Aguilar	[Signature]	11-28-12 1230	Received By	[Signature]	11-28-12 1230		
Relinquished By				Received By				
Relinquished By				Received By				
Relinquished By				Received By				
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By
PRINTED O 10/9/2012								A-6004-842 (REV 2)

Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-265	
								Page 1 of 1	
Collector	J. Ayler			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52 / 9, 10			Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A
Protocol	SURV			Priority:	31 Days			Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401899. FY12 and FY13 samples cannot be in the same SDG.				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis		Holding Time	Preservative
B2MKX5	N	W	11-28-12	1231	1x500-ml AG	7196_CRF6 Hexavalent Chromium (1)		24 Hours	Cool-4C
Relinquished By	J. Ayler			Date/Time	Received By	M. Hutton			Date/Time
Relinquished By				Date/Time	Received By				Date/Time
Relinquished By				Date/Time	Received By				Date/Time
Relinquished By				Date/Time	Received By				Date/Time
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By				Date/Time	

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A-5004-842 (REV 2)

Reinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix * S = Soil DS = Drain Sacks SF = Seachment TL = Drain Linings SO = Solid T = Tree SI = Shingle W = Waste W = Water L = Liquid O = Oil V = Vapour A = Air X = Other	
Reinquished By			Date/Time	Received By			Date/Time		
Reinquished By			Date/Time	Received By			Date/Time		
Reinquished By			Date/Time	Received By			Date/Time		
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By	Date/Time

PRINTED ON 10/9/2012 A-6004-842 (REV 2)

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-302	
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 52 / 9,10			Ice Chest No.	N/A
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A
Protocol	SURV			Priority:	31 Days			Office Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS				PRIORITY			SPECIAL INSTRUCTIONS		
<p>** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE (Order 5400.5 (1990/1993))</p>				<p>SPECIAL INSTRUCTIONS</p> <p>Site Wide Generator Knowledge Information From apf/lts</p> <p>The C/CNCR for all analytical work at WSCR is 403899</p> <p>FY12 and FY13 samples cannot be in the same SDG.</p>			<p>Hold Time</p> <p>Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>		
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis			
B2ML44	10	N	11-28-12	1146	1x500-ml AG	7196_CR8: Hexavalent Chromium (1)			
						Holding Time		Preservative	
						24 Hours		Cool-4C	

Page 1 of 1

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST										C.O.C. # X13-005-307	
										Page 1 of 1	
Collector	J. Aguilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650		
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20		
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506_52/9,10			Ice Chest No.	N/A		
Shipped To (Lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A		
Protocol	SURV			Priority:	31 Days			Office Property No.	N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 4100.2 (1990/1993)											
SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.											
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis			Holding Time	Preservative	
B2M1.52	N		11-28-12	1051	1x500-mL AG	7198_CR6, Hexavalent Chromium (1)			24 Hours	Cool-4C	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)											
Requisitioned By: <i>J. Aguilar</i> Sign: <i>[Signature]</i> Date/Time: 11-28-12 1310 Received By: <i>[Signature]</i> Sign: <i>[Signature]</i> Date/Time: 11-28-12 1310 Requisitioned By: <i>[Signature]</i> Sign: <i>[Signature]</i> Date/Time: <i>[Signature]</i> Received By: <i>[Signature]</i> Sign: <i>[Signature]</i> Date/Time: <i>[Signature]</i> Requisitioned By: <i>[Signature]</i> Sign: <i>[Signature]</i> Date/Time: <i>[Signature]</i> Received By: <i>[Signature]</i> Sign: <i>[Signature]</i> Date/Time: <i>[Signature]</i>											
Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SD = Solid T = Tissue SL = Sludge WL = Waste W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other											
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Chain of Custody

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-005-303 Page 1 of 1	
Collector	J. Aquilar			Contact/Requester	Karen Waters-Husted			Telephone No.	376-4650
SAF No.	X13-005			Sampling Origin	Hanford Site			Purchase Order/Charge Code	303064ES20
Project Title	AQUIFER TUBES, NOVEMBER 2012			Logbook No.	HNF-N-506 5.2 / 9.1D			Ice Chest No.	N/A
Shipped To (lab)	Waste Sampling & Characterization			Method of Shipment	GOVERNMENT VEHICLE			Bill of Lading/Air Bill No.	N/A
Protocol	SURV			Priority:	31 Days			Office Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOL Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS Site Wide Generator Knowledge Information from applies. The CACN for all analytical work at WSCF is 403899. FY12 and FY13 samples cannot be in the same SDG.				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B2M46	2	N	W	11-28-12	1307	1x500-mL aG	7196_CRB: Hexavalent Chromium (1)	24 Hours	Cool-4C

Retransmitted By	From	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aquilar			11-28-12 1310	CH2M Hill			11-28-12 1310	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air US = Uranium Solids DL = Drilling Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Retransmitted By			Date/Time	Received By			Date/Time	
Retransmitted By			Date/Time	Received By			Date/Time	
Retransmitted By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Date/Time

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Chain of Custody

CH2MHill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # X13-006-007 Page 1 of 1	
Collector	J. Aguilar	Contract/Requester	WATERS-HUSTED, K	Telephone No.	376-4650				
SAF No.	X13-006	Sampling Origin	HANFORD SITE	Purchase Order/Charge Code	303064ES20				
Project Title	SEEPS/SPRINGS, NOVEMBER 2012	Logbook No.	HNF-N-506 52 / 9, 10	Ice Chest No.	N/A				
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A				
Protocol	SURV	Priority:	31 Days	Offsite Property No.	N/A				
POSSIBLE SAMPLE HAZARDS/REMARKS ***Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR 171.11 Dangerous Goods Regulations but are not releasable per DOE Order 458.1.**				SPECIAL INSTRUCTIONS Site Waste Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 403899.				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	No/Type Container	Sample Analysis	Holding Time	Preservative			
B2M152	N	11-28-12	1x500-mL aG	7196 CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C			
Relinquished By	Print	Sign	Date Time	Received By	Print	Sign	Date Time	Matrix *	
J. Aguilar			11-28-12 12:10	CH2MHill			11-28-12 12:10	S = Soil DS = Drum Solids SE = Sediment DL = Drum Leachate SO = Solid T = Tissue SL = Sludge WI = Waste W = Water L = Leachate O = Oil V = Volatile A = Air X = Other	
Relinquished By	Date Time	Received By	Date Time	Relinquished By	Date Time	Received By	Date Time		
Relinquished By	Date Time	Received By	Date Time	Relinquished By	Date Time	Received By	Date Time		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date Time			

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